

Nursing Management of Seizures

Guideline: The nurse should have an understanding of seizures as well as the medications, interventions, and monitoring strategies used to control seizures and to minimize their negative impact on the quality of life.

DEFINITIONS:

Epilepsy: A condition of recurring seizures that are unprovoked by an immediate identified cause.

Primary care prescribers: Physicians, nurse practitioners, and physician's assistants who provide primary care services and are authorized to prescribe medications and treatments for people on their assigned caseloads.

Seizure: A discrete event characterized by a sudden, excessive, and disorderly (abnormal) discharge of electrons in the brain that may be accompanied by an abrupt alteration in motor and sensory function and level of consciousness.

RATIONALE:

1. Seizure disorders are chronic health conditions experienced by many people with developmental disabilities.
2. The primary goal of care is to minimize the impact of seizure disorders on the lives of individuals with developmental disabilities.
3. The cooperation of all team members, including the individual, is required to establish optimal levels of seizure control.
4. The primary care prescriber or medical consultant is the only team member who can medically diagnose a seizure, classify the seizure type, and order treatment.
5. Seizures are classified according to the International Classification System of Epileptic Seizures, permitting selection of an appropriate anticonvulsant and optimal seizure management by the primary care prescriber.
6. The proper diagnosis and classification of seizure disorders may be difficult to determine because of communication deficits, confusing clinical presentation, and absent or insufficient history.
7. The primary care prescriber must rely on the description of seizures by observers to make a reliable diagnosis.
8. Accurate descriptions of seizure activity and a system for recording and reporting the activity is essential to seizure management.
9. Because seizures frequently occur during the absence of professional staff, all staff involved with individuals who may have seizures must be trained in observing and recording seizure activity, and managing and protecting the individual during and after a seizure.

EXPECTED OUTCOMES:**Initial intervention**

Proper interventions should take place at the time of seizure activity.

1. Staff observing the seizure activity should notify the nurse and provide an accurate description of the clinical presentation. The nurse should document the reported observations in the nursing notes.
2. **Staff should notify the nurse immediately if the individual continues to seize for more than two (2) consecutive minutes or the individual experiences two (2) or more generalized seizures without full recovery of consciousness between seizures.**
 - a. The nurse should assess the condition of the individual immediately after receiving the call for assistance. The assessment should include the individual's level of cardio-pulmonary risk. Any action taken, including a request for medical consultation, should be documented in the nursing notes.
 - b. The nurse should continue to follow the procedures outlined in the guideline for Prolonged Seizure Activity, documenting reported observations, personal observations, actions taken, and the individual's response to treatment in the nursing notes.

Nursing Assessment

Nursing assessment of seizure activity should occur and be documented in the nursing notes.

1. Appropriate information about what occurred during the ictal (active seizure) phase should be documented. If the nurse does not actually witness the seizure, persons present should be consulted to obtain the information. (See General Guidelines, pages 4 and 5.)
2. The individual should be monitored during the postictal phase of the seizure. The individual's postictal condition and activity should be documented. (See General Guidelines, page 4.)
3. Any action taken, including a request for medical consultation, should be documented in the nursing notes.

Diagnostic Reasoning

Significant or unusual findings should be reported immediately to the primary care prescriber. The decision of what to report is based on review of the seizure characteristics as well as the seizure history which includes:

1. current seizure medications and past history,
2. current frequency of seizures, date of last seizure, and type and characteristics of seizures,
3. any complications or injuries related to the seizures,
4. neurological consultation reports including results of specified follow-up,
5. EEG reports and results, and
6. recent serum anticonvulsant levels.

Planning

Planning strategies related to seizure management should occur and be documented.

1. The individual's risk factors and actual or potential health problems should be included in the health assessment report and also in the Single Plan as needed.

Planning cont'd

2. If the individual receives psychotropic medication, information about the individual's seizure status and anticonvulsant medications should be discussed and documented as part of the individual's Psychotropic Drug Review Plan.
3. Information regarding the type, frequency, and pattern of seizure activity; precipitating and associated factors; and trends in seizure activity should be included in the health section of the Single Plan.
4. Information about the potential and actual side effects of the prescribed anticonvulsant medications should be included in the health section of the Single Plan.
5. Training sessions for direct care staff as well as other team members should occur. These sessions should include specific issues related to the individual's seizures as well as overall observation, management, documentation, and safety issues related to seizure activity.
6. Specific nursing activities developed to eliminate and reduce seizures and to assist the person become more independent in management of the seizure disorder should be included in the Single Plan as needed. This may include activities related to prevention of injuries and secondary complications.

Implementation**Plans should be implemented and nursing interventions documented.**

1. All orders for medication, treatment, and diagnostic procedures should be carried out as prescribed by the primary care prescriber.
2. The nursing notes should reflect that diagnostic procedures were completed as ordered.
3. Appropriate injury protective practices should be initiated as prescribed by the primary care prescriber or recommended by the Interdisciplinary Team. Team recommendations should be included in the Single Plan.
4. The individual's seizure activity should be accurately documented in the individual's record. Periodic review to identify trends and changes should be documented in the nursing notes.
5. For additional information on documentation procedures, see the Nursing Documentation Guideline.

Evaluation**Evaluation of the seizure management plan should occur and the results documented.**

1. The nurse should monitor the results of seizure management program and make recommendations to the primary care prescriber and interdisciplinary team for changes based on the progress noted.
2. Side effects and untoward interactions of medications should be documented in the nursing notes and reported immediately to the primary care prescriber.
3. Trends and changes in seizure activity (type and/or frequency) should be documented in the nursing notes and reported to the primary care prescriber.
4. Seizure records should be reviewed on a regular basis for accuracy and completeness.

GENERAL GUIDELINES^{1,2}

Before a seizure occurs:

1. Safety measures should be taken if there is an indication that the person is experiencing an aura before the onset of a seizure, (e.g., have the individual lie down).
2. Determine if changes can be made in activities or situations that may trigger seizures.
3. Keep the bed in a low position with siderails up, and use padded siderails as needed.
(*These precautions help prevent injury from fall or trauma.*)
4. Individuals with mental retardation or other developmental disabilities may have altered bowel habits, slowed activity, and /or decreased motor skills before a seizure.¹

During a seizure: (*Ictal stage*)

1. When a seizure occurs, observe and document the following:
 - a. Date, time of onset, duration
 - b. Activity at time of onset
 - c. Level of consciousness (confused, dazed, excited, unconscious)
 - d. Presence of aura (if known)
 - e. Movements
 1. Body part involved
 - progression and sequencing of activity (*site of onset of first movement is very important as well as pattern, order of progression, or spreading involvement*)
 - symmetry of activity
 - unilateral or bilateral
 2. Type of motor activity
 - clonic (jerking)
 - myoclonic (single jerk of muscle or limb)
 - tonic (stiffening)
 - abnormal posturing movements,
 - dystonia,
 - eyes: eye deviation, open, rolling or closed, eyelids flickering
 - head turning,
 - twitching
 - f. Respirations (impaired/absent; rhythm and rate)
 - g. Heart (rate and rhythm)
 - h. Skin changes
 - color/temperature;
 - pale/cyanotic, (also check lips, earlobes, nailbeds)
 - cool/warm;
 - perspiration/clammy)
 - i. Gastrointestinal
 - belching
 - flatulence
 - vomiting
 - j. Pupillary size, symmetry, and reaction to light
 - k. Changes in sensory awareness (auditory, gustatory, olfactory, vertiginous, visual)
 - l. Presence of other unusual and/or inappropriate behaviors

During a seizure cont'd

2. Ensure adequate ventilation.
 - a. Loosen clothing, postural support devices and/or restraints.
 - b. DO NOT try to force an airway or tongue blade through clenched teeth. (*Forced airway insertion can cause injury.*)
 - c. Turn the person into a side-lying position as soon as convulsing has stopped. (*This will help the tongue return to its normal front-forward position and will also allow accumulated saliva to drain from the mouth.*)
3. Protect the person from injury (e.g., help break fall, clear the area of furniture).
4. DO NOT restrain movement. (*Trying to hold down the person's arms or legs will not stop the seizure. Restraining movement may result in musculoskeletal injury.*)
5. Remain with the person and give verbal reassurance. (*The person may not be able to hear you during unconsciousness but verbal assurances help as a person is regaining consciousness.*)
6. Provide as much privacy as possible for the individual during and after seizure activity.
7. Provide other supportive therapy as ordered by primary care prescriber or according to facility protocol.

After the Seizure: (Postictal Stage)

1. After the seizure activity has ceased, record the presence of the following conditions and their duration in the individual's record. Continue to assess until person returns to baseline.¹
 - a. gag reflex, decreased
 - b. headache (character, duration, location, severity)
 - c. incontinence (bladder and bowel)
 - d. injury (bruises, burns, fractures, lacerations, mouth trauma)
 - e. residual deficit
 - behavior change
 - confusion
 - language disturbance
 - poor coordination
 - weakness/paralysis of body part(s)
 - sleep pattern disturbance
2. Allow the individual to sleep; reorient upon awakening. (*The individual may experience amnesia; reorientation can help regain a sense of control and help reduce anxiety.*)
3. Conduct a post seizure evaluation
 - a. What was the person doing prior to the seizure?
 - b. Was this the first seizure?
 - c. Review current medications including recent changes in medicine and/or dose.
 - d. Other illnesses?
 - e. Possible precipitating factors (See Table 1)

Table 1. Possible Precipitating Factors for Seizures ^{1,2,3}

CONDITIONS	FACTORS
Physical	<ul style="list-style-type: none"> • Overexertion • Sleep deprivation • Alteration in bowel elimination • Fever • Recent head trauma • Concurrent illness/infections • Over-hydration • Excesses in caffeine, sugar, and other foods
Psychosocial/emotional	<ul style="list-style-type: none"> • Stress • Depression • Anxiety • Psychosis • Anger
Metabolic and Electrolyte Imbalance	<ul style="list-style-type: none"> • Low blood glucose • Low sodium • Low calcium • Low magnesium • Dehydration • Hyperventilation
Medication or chemical	<ul style="list-style-type: none"> • Reduction or inadequate treatment of AEDs • Withdrawal of alcohol or other sedative agents • Administration of drugs with pro-convulsant properties (e.g., central nervous system stimulants and anticholinergics including over the counter antihistamines) • Most dopamine blocking agents • Newer antipsychotics, particularly clozapine • Antidepressants, especially bupropion • Immune suppressants such as cyclosporine • Antibiotics such as quinolones or imipenem/cilastatin • Toxins
Hormonal Variations	<ul style="list-style-type: none"> • Menstruation • Ovulation • Pregnancy
Environmental	<ul style="list-style-type: none"> • Particular odors • Flashing lights • Certain types of music

Considerations for Planning Daily Care²

General Health

1. Avoid constipation, excessive fatigue, hyperventilation and stress because they may trigger seizures.
2. Seizures may increase around the time of menses.
3. Fever may trigger seizures, therefore, the fever and underlying cause must be treated. If antibiotics are ordered, interactions with AEDs should be evaluated.
4. Environmental and recreational risk factors that should be avoided or minimized:
 - a. Electric shocks
 - b. Noisy environments
 - c. Bright, flashing lights
 - d. Poorly adjusted televisions or computer screens
5. Showers, rather than tubs baths, should be taken, when possible.
6. Good oral hygiene and regular visits to the dentist are important to minimize effects of gingival hyperplasia that can occur from some AEDs.

Diet

1. A well balanced diet should be eaten at regular times.
2. Coffee and other caffeinated beverages should be limited to a moderate amount.
3. Fluid intake should be between 1,000 to 1,500 ml per day (depending on the weather).
4. Alcoholic beverages should be avoided.

Physical Activity

1. Regular activity and exercise should be encouraged. Activity tends to inhibit rather than increase seizures. However, over-fatigue and hyperventilation should be avoided. When possible, exercise should take place in climate-controlled settings.
2. Activities that could harm the patient should be avoided. The person may swim if accompanied by someone who knows what to do if a seizure occurs. The person should wear a life jacket and stay in relatively shallow water to facilitate seizure management should a seizure occur.
3. Regular sleep patterns are important.

REFERENCES

1. American Association of Neuroscience Nurses (1997). Clinical guideline series: Seizure assessment. Author: Chicago.
2. Hickey, J.V. (2003). The clinical practice of neurological and neurosurgical nursing. (5th ed.). Philadelphia: Lippincott.
3. American Epilepsy Association (2004). Clinical Epilepsy. Retrieved on August 29, 2005 from <http://www.aesnet.org/visitors/ProfessionalDevelopment/MedEd/ppt/ppts03/clinicore.pdf>